

AMENDMENTS TO THE CLAIMS

1. A method of optimizing the layout of a microdevice to be created by a photolithographic process, comprising the acts of:

storing a microdevice layout in a hierarchical database having a number of levels, each level including definitions of polygons corresponding to features in the microdevice, each polygon being defined as a number of vertices;

analyzing interacting polygons in the database;

promoting polygons or portions thereof such that polygons that interact are defined on the same hierarchical level of the database;

fragmenting the polygons in a level of the database containing any promoted polygons so that the vertices that define each polygon are optimized for the application of a tool for resolution enhancement techniques (RET); and

applying the RET tool to the layout.

2. The method of Claim 1, additionally comprising:

fragmenting a portion of the layout for the application of an RET prior to the step of analyzing the interacting polygons.

3. The method of Claim 1, wherein the act of promoting polygons includes:

defining a copy of a polygon or portion thereof in another database level containing an interacting polygon without altering the fragmentation of the polygons in the level from which the promotions are made.

4. The method of Claim 1, in which the promoted portions of polygons are edge segments.

5. The method of Claim 4, further comprising:

keeping a record of which edge segments in a database level have had copies promoted to another hierarchy level.

6. The method of Claim 4, further comprising:

keeping a record of which edge segments in a database level have been promoted from another hierarchy level.

7. A method of performing optical and process correction (OPC) in a hierarchical database defining a microdevice to be manufactured lithographically, comprising acts of:

fragmenting polygons in the levels of the hierarchical database so that each polygon is optimized for OPC;

selectively promoting interacting polygons or portions thereof such that interacting polygons are defined on the same database level, wherein said selective promotion does not affect fragmentation of the polygons or portions thereof that are promoted;

refragmenting the polygons and any promoted polygons or portions thereof for the application of an OPC tool; and

applying the OPC tool.

8. The method of Claim 7, in which the promoted portions of polygons are edge segments.

9. The method of Claim 7, in which the OPC tool is applied using parallel processing.

10. A method of performing optical and process correction (OPC) on a hierarchical database defining a microdevice to be manufactured lithographically, comprising:

selectively promoting copies of polygons or portions thereof in the database such that interacting polygons or portions thereof are defined in the same database level;

fragmenting polygons defined in a level of the hierarchical database including any promoted polygons or portions thereof for the application of an OPC tool; and

applying the OPC tool to the fragmented database levels.

11. The method of Claim 10, in which the promoted portions of polygons are edge segments.

12. The method of Claim 11, in which the OPC tool is applied using parallel processing.

13.-27. (Canceled)